

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number  
**WO 2005/011149 A1**

(51) International Patent Classification<sup>7</sup>: **H04B 7/155**

(21) International Application Number:  
PCT/KR2004/001852

(22) International Filing Date: 23 July 2004 (23.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
10-2003-0051152 24 July 2003 (24.07.2003) KR

(71) Applicant (for all designated States except US): UTStar-  
com Korea Limited [KR/KR]; San 136-1, Ami-ri, Bubal-  
eub, Icheon-si, Kyongki-do 467-701 (KR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): YUN, Kyoung Dok  
[KR/KR]; Shindong-a Apt. 2-912, Daerim 3-dong,  
Yeongdeungpo-gu, Seoul 150-764 (KR).

(74) Agent: YOON, Jee Hong; Hannuri Bldg., 219, Naeja-  
dong, Chongno-gu, Seoul 110-053 (KR).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,  
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

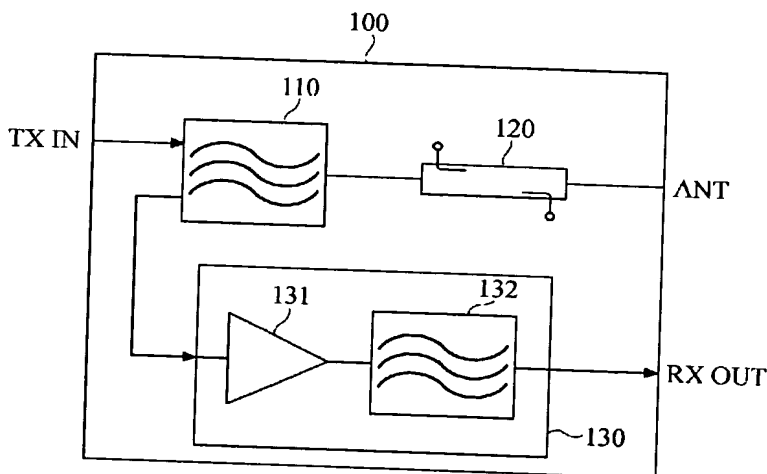
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS FOR IMPROVING RECEPTION SENSITIVITY OF BASE TRANSCEIVER STATION



(57) Abstract: In a transmission/reception apparatus in a base transceiver station (BTS), a commercial surface acoustic wave filter (SAW filter) can be used for suppressing transmission signals interfering with the reception path. By suppressing the interference signals, the reception sensitivity can be improved. In one embodiment of the present invention, an apparatus for processing trans-  
mission/reception signals in a BTS, comprises: a coupler connected to an antenna for providing reception signals; a duplexer having three terminals for routing the reception signals at a first terminal to a second terminal of the duplexer, and routing transmission sig-  
nals at a third terminal of the duplexer to the first terminal, the coupler being further operative to provide the transmission signals at  
the first terminal to the antenna; and a narrow band low-noise amplifier connected to the second terminal for amplifying the reception  
signals from the second terminal, the narrow band low-noise amplifier being operative to suppress out-of-band interference signals  
such that reception sensitivity can be improved.

WO 2005/011149 A1